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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,157	11/21/2003	Howell Schwartz	DC-05505	2121
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HAMILTON & TERRILE, LLP			BLACKMAN, ROCHELLE ANN J	
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AUSTIN, TX 78720			PAPER NUMBER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/719,157	Applicant(s) SCHWARTZ ET AL.	
	Examiner Rochelle Blackman	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Claim 16 is objected to because of the following informalities: on line 2 of the claim, "image" should be - image generator- . Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 6, 8-10, 12, and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Luerkens et al. (U.S. Patent No. 6,779,896).

Luerkens discloses a system (see FIGS. 1 and 2) for managing projector bulb life, the system comprising: a luminance sensor (130) disposed to sense the luminance of the projector bulb (322, 422); a luminance controller (see *Control signal* and 140 of

Art Unit: 2851

FIG. 1 and 2) interfaced with the luminance sensor and a power driver (see *Power supply* and 110 in FIG. 2) of the projector bulb, the luminance controller operable to reduce the power driver output to limit projector bulb luminance at or below a setpoint level (rated value or power level of lamp 322, 422) associated with a desired projector bulb life if the maximum luminance of the projector bulb is greater than a predetermined brightness (see col. 4, lines 40 - 53); wherein the luminance controller is further operable increase power driver output to maintain projector bulb luminance substantially at the setpoint level if the sensed luminance falls to a predetermined brightness (see col. 4, lines 30-40); wherein the luminance sensor comprises an infrared sensor (see 130) associated with an infrared filter (see 140 – considered to be an “infrared filter” because it is a high-pass filter) of the projector; a method for managing projector bulb life (see function of elements in FIGS. 1 and 2), the method comprising sensing the luminance of the projector bulb (see function of 130); determining that the sensed luminance exceeds a luminance threshold (brightness exceeds rated value or power level – see col. 4, lines 38-40) associated with a desired projector bulb life; and reducing the power applied to the projector bulb to reduce the luminance of the projector bulb to at or below the luminance threshold associated with the desired projector life (see col. 4, lines 40-53); further comprising: determining that the sensed luminance falls below a luminance threshold (rated value or power level of lamp 322, 422) associated with a minimum desired available luminance at a maximum brightness setting (see function of 130); and increasing the power applied to the projector bulb to increase the luminance of the projector bulb to the luminance threshold of the minimum desired luminance for

the maximum brightness setting (see col. 4, lines 30-40); wherein the luminance threshold associated with a desired projector bulb life (rated value or power level of lamp 322, 422) and the luminance threshold associated with minimum desired available luminance (constant average lamp power) are substantially equal when the projector is set at maximum brightness (constant brightness in the medium term – see col. 5, lines 9-12); further comprising: passing the light from the projector bulb through an infrared filter (see 140 - considered to be an “infrared filter” because it is a high-pass filter); wherein sensing the luminance further comprises sensing the infrared light at the infrared filter (see function of 130); a projector (see FIGS. 1-2) for display of information, the projector comprising: an image generator (424) operable to display the information; a bulb (322, 422) operable to provide light to illuminate the image, a power driver (see 110) interfaced with the bulb and operable to provide selectable variable power to illuminate the image with selectable variable luminance; a luminance sensor (130) disposed to sense the luminance of the bulb; and a luminance feedback controller (see *Control signal* and 140 of FIG. 1 and 2) interface with the power driver and the luminance sensor, the luminance feedback controller operable to control power applied by the power driver according to the luminance sensed by the luminance sensor to achieve a predetermined bulb parameter (see col. 4, lines 28-63 and col. 5, lines 5-15); wherein the luminance feedback controller achieves a desired bulb life by limiting power applied by the power driver to restrict luminance sensed by the luminance sensor at or below a predetermined setpoint (see col. 4, lines 40-63); wherein the luminance feedback controller achieves a desired maximum available luminance from the bulb by

increasing power applied by the power driver to increase luminance sensed by the luminance sensor at or above a predetermined setpoint (rated value or power level of lamp 322) when the selected luminance exceeds a predetermined level (also see col. 4, lines 30-40).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 3, 4, ~~6~~, 7, 11, 13-15, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luerkens et al. (U.S. Patent No. 6,779,896) in view of Stark et al. (U.S. Patent No. 6,520,648).

Regarding claims 3, 11, and 19, Luerkens discloses the claimed invention except for further comprising a "switch" disposed between the power driver and the luminance controller, the "switch" operable to selectively disable the projector bulb luminance controller interface with the power driver; further comprising engaging a "switch" to override the reducing of the power applied to the projector bulb so that the luminance exceeds the threshold; further comprising a "switch" interfaced with the luminance feedback controller and operable to disengage control by the luminance feedback controller of the power driver.

Art Unit: 2851

Stark teaches providing a switch (*multiple power switchable power amplitudes* - see col. 8, lines 1-6) disposed between the power driver and the luminance controller, the switch operable to selectively disable the projector bulb luminance controller interface with the power driver; further engaging a switch (*multiple power switchable power amplitudes* - see col. 8, lines 1-6) to override the reducing of the power applied to the projector bulb so that the luminance exceeds the threshold; further a switch (*multiple power switchable power amplitudes* - see col. 8, lines 1-6) interfaced with the luminance feedback controller and operable to disengage control by the luminance feedback controller of the power driver.

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide the "system"/ "method"/ "projector" of the Luerkens reference with a "switch", as taught by Stark in order to accommodate finer control of the amount of light transmitted through each of the R, G, B, and (optional) W filter segments (see col. 8, lines 1-6).

Regarding claim 4, Luerkens discloses the claimed invention except for the projector bulb comprising an "ultra high pressure mercury vapor bulb".

Stark teaches providing the projector bulb comprising an ultra high pressure mercury vapor bulb (112).

It would have been obvious to one of ordinary skill in the art at time the invention was made to provide the "system" of the Luerkens with a "ultra high pressure mercury vapor bulb", as taught by Stark in order to achieve lifetime and lumen specifications in

Art Unit: 2851

the image projector or the "system" and contribute to high efficiency operation of the projector engine of the image projection system or "system" (see col. 3, lines 44-49).

Regarding claims 7, 14, 15, and 20, Luerkens discloses the claimed invention except for wherein the luminance sensor comprises a visible light sensor aligned to sense light leakage from a "mirror" of the projector; the bulb providing light for a "digital mirror device" projector having a "color wheel", and wherein sensing the luminance further comprises sensing luminance at the "color wheel"; wherein the bulb provides light for a "digital mirror device" projector having a "mirror" for projecting an image, and wherein sensing the luminance further comprises sensing luminance of light leakage at the "mirror"; wherein the image comprises output of a "digital mirror device".

Stark teaches providing wherein the luminance sensor comprises a visible light sensor (162) aligned to sense light leakage from a mirror (130) of the projector; wherein the bulb provides light for a digital mirror device projector (see 110, 130) having a color wheel (120), and wherein sensing the luminance further comprises sensing luminance at the color wheel (see 162); wherein the bulb provides light for a digital mirror device projector (see 110, 130) having a mirror (130) for projecting an image, and wherein sensing the luminance further comprises sensing luminance of light leakage at the mirror (see function of 162); wherein the image comprises output of a digital mirror device (see 130).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "system"/ "method"/ "projector" of the Luerkens reference with a "mirror" and/or "digital micromirror device" and a "color wheel", as

Art Unit: 2851

taught by Stark in order to improve brightness, color saturation, and color balance for a projected image (see col. 2, lines 35-38).

Regarding claim 13, Luerkens discloses the claimed passing the light from the projector bulb (322, 422) through a first aperture (see area where light exits reflector 421) to a colmunator (423) for illuminating an image. However, Luerkens does not appear to disclose passing the light from the projector bulb through a "second aperture" to a luminance sensor for sensing the luminance.

Stark teaches providing passing the light from the projector bulb through a second aperture (see 158 and entrance thereof in FIG. 3) to a luminance sensor (162) for sensing the luminance.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the "method" of the Luerkens reference with a "second aperture", as taught by Stark in order to collect and reflect stray rays from the "projector bulb" toward the "luminance sensor" (see col. 5, lines 36-40).

2. Claim 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luerkens et al. (U.S. Patent No. 6,779,896) in view of Hecht (U.S. Patent No. 6,637,893).

Luerkens discloses the claimed invention except the projector bulb comprising a "xenon halogen bulb".

Hecht teaches providing the projector bulb comprising a xenon halogen bulb (20).

Art Unit: 2851

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide the "system" of the Luerkens reference with a xenon halogen bulb, as taught by Hecht in order to provide a high intensity unit capable of providing a structured light beam of sufficient lumens toward an object.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luerkens et al. (U.S. Patent No. 6,779,896) in view of Forehand (U.S. Patent No 6,089,740).

Luerkens discloses the claimed invention except the projector bulb comprising a "xenon halogen bulb".

Forehand teaches providing the projector bulb comprising a xenon halogen bulb (20).

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide the "system" of the Luerkens reference with a xenon halogen bulb, as taught by Forehand in order to achieve integration of advanced optics with a light source and provide a bulb with more wattage, thus providing a higher maximum luminance of the "projector bulb" (see col. 11, lines 23-26).

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

Art Unit: 2851

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB


JUDY NGUYEN
PRIMARY EXAMINER